

Remarks:

Reconsideration of the application, as amended herein, is respectfully requested.

Claims 9, 10, 12 - 15 and 17 - 22 are presently pending in the application. Claims 9 and 17 have been amended. Claims 1 - 8, 11 and 16 were previously canceled.

In item 3 of the above-identified Office Action, claims 9, 10, 12 - 15 and 17 - 22 were rejected under 35 U.S.C. § 103(a) as allegedly being obvious over U. S. Patent No. 6,784,392 to Piazza et al ("**PIAZZA**") in view of U. S. Patent No. 4,300,028 to Cronin et al ("**CRONIN**").

Applicants respectfully traverse the above rejections.

- I. The modification of the **PIAZZA** reference suggested in the Office Action would impermissibly destroy the teachings of that reference.

First, Applicants' independent claims 9 and 17 recite, among other limitations:

a switch-disconnector module having an electrically conductive housing, **said electrically conductive housing being substantially cylindrical . . .**
[emphasis added by Applicants]

At least one advantage of Applicants' particularly claimed switch-disconnector module having a substantially cylindrical

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electrically conductive housing is disclosed in the specification of the instant application, for example, on page 5 of the instant application, lines 12 - 20, which states:

It is advantageously also possible to provide for the movable switching piece to be driven via a shaft which passes through **the essentially cylindrical housing**.

An essentially cylindrical shape of the housing allows flexible arrangement of the shaft for driving the movable switching piece. The rotation axis of the shaft may, for example, be arranged radially with respect to the axis. Alternatively, it is also possible to provide for the axis to be skewed with respect to the rotation axis of the shaft. If the drive for the switching piece and the grounding switch are combined, only one common shaft is required, and this passes through the housing. This simplifies the housing design. [emphasis added by Applicants]

As such, Applicants' claims require, among other limitations, a switch-disconnector module having **a substantially cylindrical** electrically conductive housing.

As acknowledged on page 3 of the Office Action, the **PIAZZA** reference, does not teach or suggest a conductive housing being substantially cylindrical. Rather, page 3 of the Office Action goes on to allege that it would have been obvious to use the substantially cylindrical switch-disconnector housing of the **CRONIN** reference in **PIAZZA** "so as to make manufacturing easier". Applicants respectfully disagree.

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Prior art references cannot be modified in such a way that the proposed modification renders the prior art unsatisfactory for its intended purpose. This is set forth in M.P.E.P. § 2143.01(V), which states, in part:

V. THE PROPOSED MODIFICATION CANNOT RENDER THE PRIOR ART UNSATISFACTORY FOR ITS INTENDED PURPOSE

If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.

Similarly, prior art references cannot be modified in such a way that the proposed modification changes the principle of operation of a reference. This is set forth in M.P.E.P. § 2143.01(VI), which states, in part:

VI. THE PROPOSED MODIFICATION CANNOT CHANGE THE PRINCIPLE OF OPERATION OF A REFERENCE

If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious.

However, any modification being made to the **PIAZZA** reference to include a substantially cylindrical switch-disconnector housing, as required by Applicants' claims, would impermissibly change the principle of operation of the **PIAZZA** device and render the device of **PIAZZA** unsatisfactory for its intended purpose. More particularly, in contrast to

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Applicants' claimed invention, the **PIAZZA** reference discloses a gas-insulated switchgear device including a substantially spheroidal enclosure 99. See, for example, col. 3 of **PIAZZA**, lines 19 - 25, which state:

In the device according to the invention, a first disconnection unit 100 is used between the input bushing 40 and the enclosure 1, at the base of the bushing 40 itself. As shown in detail in FIGS. 3 and 4, the disconnection unit 100 comprises an enclosure 99 which has a substantially spheroidal central portion and two mutually opposite ends 97 and 98 which are structurally connected to the enclosure 1 and to the first bushing 40, respectively. [emphasis added by Applicants]

PIAZZA specifically teaches that the spheroidal enclosure 99 of **PIAZZA** is provided to ensure a specific principal of operation of the **PIAZZA** device and to ensure that the **PIAZZA** device operates satisfactorily for its intended purpose. More particularly, col. 3 of **PIAZZA**, line 61 - col. 4, line 2, states:

Another advantage of this solution consists of the fact that the disconnection unit 100, being arranged inside a containment enclosure, is in a position in which it is protected against atmospheric agents, thus allowing to reduce the necessary maintenance interventions; furthermore, the substantially spheroidal shape of the enclosure 99 allows to optimize the distribution of the electric field inside said disconnection unit 100, without requiring cumbersome constructive elements. [emphasis added by Applicants]

As such, **PIAZZA** specifically teaches that switch-disconnector of **PIAZZA** includes a substantially spheroidal shape of the

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enclosure to optimize the distribution of the electric field inside the disconnection unit 100 of PIAZZA. As such, modifying PIAZZA to replace the substantially spheroidal enclosure of PIAZZA with a substantially cylindrical enclosure, would, in the absence of cumbersome constructive elements, eliminate the optimization of the distribution of the electric field inside the disconnection unit, desired by PIAZZA. Thus, the modification of PIAZZA proposed on page 3 of the Office Action would impermissibly alter the operation of the device of PIAZZA and render it unsatisfactory for its intended purpose. As such, the teachings of the PIAZZA reference cannot be modified, by CRONIN, or by any other reference, to change the shape of the switch-disconnector enclosure from spheroidal, as taught in PIAZZA, to substantially cylindrical, as required by Applicants' claims. Rather, such a modification would be barred by M.P.E.P. §§ 2143.01(V) and (VI).

At the very least, it must be acknowledged that PIAZZA clearly teaches away from any modification of the spheroidal shape of the enclosure of the PIAZZA reference.

For the foregoing reasons, among others, Applicants' claims are believed to be unobvious over the PIAZZA and CRONIN references.

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II. The teachings of the PIAZZA and CRONIN references do not teach or suggest, among other limitations of Applicants' claims, Applicants' particularly claimed outdoor bushing configuration arranged on an axis.

Further, Applicants have amended claims 9 and 11 to make it even more clear that the axis is an axis extending through the outdoor bushing configuration. Applicants' claims 9 and 11 further recite, among other limitations:

a phase conductor extended along said axis and to be interrupted by an isolating gap into a first section and a second section; [emphasis added by Applicants]

As such, Applicants' amended claims make it even more clear that the phase conductor interrupted by an isolating gap extends along an axis through the same outdoor bushing configuration that includes the switch-disconnector having a substantially cylindrical conductive housing.

As discussed in Section I, above, PIAZZA cannot be modified in the way suggested on page 3 of the Office Action to teach Applicants' claimed invention. However, even if PIAZZA could be modified as suggested in the Office Action, arguendo, the combination of PIAZZA and CRONIN would still not teach or suggest Applicants' claimed invention.

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More particularly, page 3 of the Office Action alleged, in part:

Regarding Claims 9 and 17, Piazza et al. disclose the instant claimed invention except for the conductive housing being substantially cylindrical. Cronin et al. [Figure 1] disclose disconnecter [43, 44] having substantially cylindrical housing. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a substantially cylindrical housing in Piazza et al. as suggested by Cronin et al. so as to make manufacturing easier.

Applicant respectfully disagrees with the above-quoted allegation from the Office Action. Neither of the cited **PIAZZA** or **CRONIN** references teaches or suggests, among other limitations of Applicants' claims, **a phase conductor, interrupted by an isolating gap, extending along an axis through an outdoor bushing configuration that includes a switch-disconnector having a substantially cylindrical conductive housing**, as required by Applicants claims.

As acknowledged in the Office Action, **PIAZZA** fails to teach or suggest the conductive housing of a switch disconnector being substantially cylindrical. Consequently, **PIAZZA** cannot possibly teach or suggest the phase conductor of the switch-disconnector in the substantially cylindrical housing being on an axis through the outdoor bushing configuration. However, the **CRONIN** reference does not cure the above-discussed deficiencies of the **PIAZZA** reference.

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More particularly, the Office Action pointed to the disconnectors 43, 44 of Fig. 1 of **CRONIN**, as allegedly providing a person of ordinary skill in this art with a teaching of disconnectors having a substantially cylindrical housing, which would, allegedly, be obvious to substitute for the spheroidal enclosure of **PIAZZA**. Applicants respectfully disagree.

Applicants' claims require, among other limitations, an axis to pass through the claimed outdoor bushing configuration (i.e., which includes the substantially cylindrical housing). Applicants' claims additionally require, among other limitations, that the phase conductor including an isolating gap extends along the axis through the particularly claimed outdoor bushing configuration. However, the disconnectors 43, 44 of **CRONIN** are not part of, or associated with, the bushings of **CRONIN**. Thus, the disconnectors 43, 44 of **CRONIN** cannot teach or suggest, among other limitations of Applicants' claims, a phase conductor of on an axis through the outdoor bushing configuration including a substantially cylindrical switch-disconnector housing, as required by Applicants' claims. Put quite simply, no part of the disconnectors 43, 44 extend along an axis through an outdoor bushing configuration of **CRONIN**. Thus, the cylindrical shape of the disconnectors

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43, 44 of **CRONIN** does not teach or suggest Applicants' claimed invention, even when taken, arguendo, with **PIAZZA**.

Fig. 1 of **CRONIN** does show air-to-gas bushings 5, 6 and 7. See, for example, Fig. 1 of **CRONIN**. However, these bushings 5, 6 and 7 of **CRONIN** are not assigned to the disconnectors 43, 44 of **CRONIN**. Instead, as disclosed in col. 2 of **CRONIN**, lines 26 - 32, the air-to-gas bushings 5, 6 and 7 of **CRONIN** are in communication with the horizontal disconnect switches 5a, 6a and 7a of Fig. 1 of **CRONIN**. Col. 2 of **CRONIN**, lines 26 - 32, state:

FIG. 1 shows a typical conventional three-phase gas-insulated substation. A typical prior art gas-insulated substation is described, for example, in U.S. Pat. No. 4,130,850 dated Dec. 19, 1978. The three phase lines 2,3 and 4 enter the substation via air to-gas bushings 5,6 and 7 and horizontal disconnect switches 5a,6a and 7a. [emphasis added by Applicants]

However, as can be seen from FIG. 1 of **CRONIN**, the axes extending through the bushings 5, 6, and 7 of **CRONIN** do not extend through the horizontal disconnect switches 5a, 6a and 7a of **CRONIN**, as required by Applicants' claims, but rather, run at angles relative to the axes running through the bushings 5, 6 and 7 of **CRONIN**. Similarly, no other disconnector of **CRONIN** includes a phase conductor extending along an axis through the bushings 5, 6 and 7 of **CRONIN**.

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As such, like the **PIAZZA** reference, the **CRONIN** reference fails to teach or suggest, among other limitations of Applicants' claims, Applicants' particularly claimed **phase conductor with an isolating gap, extending along an axis through the outdoor bushing configuration** including a substantially cylindrical switch-disconnector housing.

In fact, the **CRONIN** reference would teach away from Applicants' claimed invention by teachings that the phase conductor of the switch disconnector should **not** extend along an axis through the bushing, but rather, should extend **horizontal** to the bushings, as specifically taught in connection with the bushings 5, 6 and 7 of **CRONIN** and switch disconnectors 5a, 6a and 7a of **CRONIN**. Additionally, the teaching in **CRONIN**, of providing a switch disconnector **at an angle to** the bushing, when combined with the teachings of **PIAZZA**, would destroy the teachings of **PIAZZA**.

For the foregoing reasons, among others, the combination of **PIAZZA** and **CRONIN** fails to teach or suggest, and specifically teaches away from, Applicants' claimed invention.

III. The teachings of the PIAZZA and CRONIN references do not teach or suggest, among other limitations of Applicants' claims, Applicants' particularly claimed housing arranged coaxially on an axis through the outdoor bushing configuration, as required by Applicants' claim 9.

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Further, Applicants have amended claim 9 to recite, among other limitations:

a switch-disconnector module having an electrically conductive housing, said electrically conductive housing being substantially cylindrical and extending coaxially around said axis; [emphasis added by Applicants]

As such, among other limitations, Applicants' claim 9 requires, among other limitations, the substantially cylindrical housing of the switch-disconnector module to extend coaxially around the axis through the outdoor bushing configuration.

As discussed in Section I, above, **PIAZZA** cannot be modified in the way suggested on page 3 of the Office Action to teach Applicants' claimed invention. However, even if **PIAZZA** could be modified as suggested in the Office Action, arguendo, the combination of **PIAZZA** and **CRONIN** would still not teach or suggest Applicants' invention of claim 9.

As can be seen from the remarks made in Section II, above, neither the **PIAZZA** reference, nor the **CRONIN** reference, teaches or suggests, among other limitations of Applicants' claims, a substantially cylindrical switch-disconnector module housing extending coaxially around the axis through the

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outdoor bushing configuration, as required by Applicants' claims.

PIAZZA fails to teach or suggest the conductive housing of a switch disconnecter being substantially cylindrical. Consequently, **PIAZZA** cannot possibly teach or suggest the phase conductor of the switch-disconnector in the substantially cylindrical housing being on an axis through the outdoor bushing configuration. As can be seen from **FIG. 1** of **CRONIN**, the axes extending through the bushings 5, 6, and 7 of **CRONIN** do not extend through the horizontal disconnect switches 5a, 6a and 7a of **CRONIN**, but rather, run at angles relative to the axes running through the bushings 5, 6 and 7 of **CRONIN**. As such, in contrast to Applicants' invention of claim 9, the **CRONIN** reference teaches that an axis through the switch disconnecter housing runs at an angle to an axis through the bushing.

For the foregoing reasons, among others, the combination of **PIAZZA** and **CRONIN** fails to teach or suggest, and specifically teaches away from, Applicants' invention of claim 9.

IV. The teachings of the **PIAZZA** and **CRONIN** references do not teach or suggest, among other limitations of Applicants' claims, Applicants' particularly claimed shaft passing through the substantially cylindrical outer wall of the electrically conductive housing, as required by Applicants' claim 11.

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Further, Applicants have amended claim 11 to recite, among other limitations:

a switching piece or an element of a multi-part switching piece to be moved at an angle relative to said axis, said switching piece being driven by a shaft passing through the substantially cylindrical outer wall of said electrically conductive housing.
[emphasis added by Applicants]

As such, among other limitations, Applicants' claim 11 requires, among other limitations, a shaft passing through the substantially cylindrical outer wall of the electrically conductive switch-disconnector housing.

As discussed in Section I, above, **PIAZZA** cannot be modified in the way suggested on page 3 of the Office Action to teach Applicants' claimed invention. However, even if **PIAZZA** could be modified as suggested in the Office Action, arguendo, the combination of **PIAZZA** and **CRONIN** would still not teach or suggest Applicants' invention of claim 11.

PIAZZA fails to teach or suggest the conductive housing of a switch disconnector being substantially cylindrical.

Consequently, **PIAZZA** cannot possibly teach or suggest, among other limitations of Applicants' claims, a shaft passing through the substantially cylindrical outer wall of the electrically conductive switch-disconnector housing, as

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required by Applicants' claim 11. The **CRONIN** reference additionally fails to teach or suggest, among other limitations of Applicants' claims, a shaft passing through the substantially cylindrical outer wall of the electrically conductive switch-disconnector housing, as required by Applicants' claim 11. As such, neither the **PIAZZA** reference, nor the **CRONIN** reference, teach or suggest, among other limitations of Applicants' claims, a shaft passing through the substantially cylindrical outer wall of the electrically conductive switch-disconnector housing.

For the foregoing reasons, among others, the combination of **PIAZZA** and **CRONIN** fails to teach or suggest, and specifically teaches away from, Applicants' invention of claim 11.

V. Conclusion.

For the foregoing reasons, among others, Applicants' claims are believed to be patentable over the **PIAZZA** and **CRONIN** references, whether taken alone, or in combination.

It is accordingly believed that none of the references, whether taken alone or in any combination, teach or suggest the features of claims 9 and 17. Claims 9 and 17 are, therefore, believed to be patentable over the art. The

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dependent claims are believed to be patentable as well because they all are ultimately dependent on claims 9 or 17.

In view of the foregoing, reconsideration and allowance of claims 9, 10, 12 - 15 and 17 - 22 are solicited.


In the event the Examiner should still find any of the claims to be unpatentable, counsel would appreciate receiving a telephone call so that, if possible, patentable language can be worked out.

If an extension of time for this paper is required, petition for extension is herewith made.

Please charge any fees that might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner Greenberg Stemmer LLP, No. 12-1099.

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